

What is claimed is:

1. A method of controlling microorganisms on the surface of food comprising irradiating the surface of a food after packaging said food, with at least one pulse of ultraviolet light.

5 2. The method of Claim 1, wherein the food packaging comprises a co-extruded blend of polyolefins.

3. The method of Claim 1, wherein said microorganisms are controlled by destructively altering nucleic acid structures within the microorganism.

10 4. The method of Claim 1, wherein said microorganisms are controlled by rupture or disintegration of said microorganisms with said irradiation without alteration of surface properties of said food.

5. The method of Claim 1, wherein said light pulses have a duration ranging from about 0.1 ns to about 1,000 ns.

15 6. The method of Claim 1, wherein said microorganisms are irradiated with fewer than about 100 of said light pulses.

7. The method of Claim 1, wherein said food is irradiated for less than about one second.

8. The method of Claim 1, wherein said light pulses have energy densities ranging from about 0.1 J/cm² to 10 J/cm².

20 9. The method of Claim 1, wherein said at least one light pulse has a wavelength between about 200 nm and about 400 nm.

10. A method of reducing microorganisms on the surface of a packaged food object comprising irradiating said microorganisms on the surface of a food object with a plurality of ultraviolet light pulses for less than about one second, said light pulses having 25 a duration between about 0.1 ns to about 1,000 ns, and wherein said light pulses have energy densities between about 0.1 J/cm² and about 10 J/cm², and wherein said microorganisms are reduced by said irradiation without affecting surface characteristics of said food object.

30 11. The method of Claim 10, wherein the food packaging comprises a co-extruded blend of polyolefins.

12. The method of Claim 10, wherein said light pulses have a wavelength between about 200 nm and about 400 nm.

13. The method of Claim 10, wherein said microorganisms are irradiated with fewer than approximately 100 said light pulses.

14. A method of killing microorganisms on the surface of a packaged food 5 object comprising

irradiating microorganisms on a surface of a food object with a plurality of ultraviolet light pulses for less than about one second,

wherein the food packaging comprises a co-extruded blend of polyolefins;

wherein said light pulses have a duration between about 0.1 ns to about 1,000 ns;

10 wherein said light pulses have energy densities between about 0.1 J/cm² and about 10 J/cm²;

wherein said light pulses have a wavelength between about 200 nm and about 400 nm; and,

15 wherein said microorganisms are reduced by said irradiation without affecting surface characteristics of said food object.

15. The method of Claim 12, wherein said microorganisms are irradiated with fewer than about 100 said light pulses.